DAIKIN

altherma

Heating

Technical Data

Daikin Altherma low temperature split

EEDEN13-725

EHBH-C

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1 Features

- Wall mounted indoor unit
- Energy efficient heating only system based on air to water heat pump technology
- Perfect fit for new built as well as for low energy houses
- Best seasonal efficiencies, providing the highest savings on running costs
- Flexible configuration with respect to heat emitters
- Possible to combine with domestic hot water

2 Specifications

2-1 Technical Specifications					EHBH04C3V	EHBH08C3V	EHBH08C9W	EHBH16C3V	EHBH16C9W
Power input	Nom.			kW	0.075			0.180	
Casing	Colour				White				
	Material				Precoated sheet metal				
Dimensions	Unit	Height		mm	890				
		Width		mm	480				
		Depth		mm	344				
	Packed unit	Height		mm	415				
		Width		mm	650				
		Depth		mm	1,016				
Weight	Unit			kg	44	46	48	47	48
	Packed unit			kg	47	49	51	50	52
Packing	Material				Carton / EPS / PP (Straps)				
	Weight			kg	2.8				
Pump	Type				DC motor				
	Nr of speeds				Inverter controlled				
	Power input			W	45			150	
Expansion vessel	Volume			l	10				
	Max. water pressure			bar	3				
	Pre pressure			bar	1				
Operation range	Heating	Ambient	Min.	°C	-25			-25 (10)	
			Max.	°C	25			35 (10)	
		Water side	Min.	°C	15 (4)				
			Max.	°C	55 (4)				
	Domestic hot water	Ambient	Min.	°CDB	-25			-20	
			Max.	°CDB	35				
		Water side	Min.	°C	25				
			Max.	°C	80				
Water side Heat exchanger	Type				Brazed plate				
	Quantity				1				
	Water volume			l	0.9	1.3		1.0	
	Water flow rate	Min.		l/min	5.0	11.0			
		Heating	Max.	l/min	25	34		51	
	Cooling	Insulation material			green felt			Elastomeric foam	
Refrigerant circuit	Gas side diameter			mm	15.9				
	Liquid side diameter			mm	6.35			9.52	
Sound power level	Nom.			dBA	40 (12)			47 (12)	
Sound pressure level	Nom.			dBA	26			33	
Water filter	Diameter perforations			mm	1				
	Material				copper - brass - stainless steel				
Water circuit	Piping connections diameter			inch	G 1"1/4 (female)				
	Safety valve			bar	3				
	Manometer				Yes				
	Drain valve / fill valve				Yes				
	Shut off valve				Yes				
	Air purge valve				Yes				
	Total water volume			l	3 (5)	4 (5)	5 (5)	4 (5)	5 (5)
PED	Category				Art3§3	Category I		Art3§3	
	Most critical part	Name			-	Plate heat exchanger		-	
		Ps*V		Bar*l	-	51.0 (0.000)		-	

2-2 Electrical Specifications				EHBH04C3V	EHBH08C3V	EHBH08C9W	EHBH16C3V	EHBH16C9W
Power supply	Voltage range	Min.	%	10				
		Max.	%	10				
Wiring connections-Communication cable	Quantity			3				
	Remark			2.5 mm²				
Wiring connections-Electric meter	Quantity			2				

2 Specifications

2-2 Electrical Specifications		EHBH04C3V	EHBH08C3V	EHBH08C9W	EHBH16C3V	EHBH16C9W
Wiring connections-Preferential kWh rate power supply	Quantity	Power: 2				
Wiring connections-Domestic hot water pump	Quantity	2				
	Remark	Minimum 0.75 mm² (2A inrush, 1A continuous)				
Wiring connections-For power supply connection to optional *KHW*	Quantity	3G				
	Remark	13A (Select diameter and type according to national and local regulations)				
Wiring connections-For connection to optional *KHW* model + Q2L	Quantity	5G				
	Remark	Select diameter and type according to national and local regulations / For more details of the voltage range and current, refer to installation manual				
Wiring connections-For connection with R5T	Quantity	Wire included in option *KHW*				
	Remark	Wire included in option *KHW*				
Wiring connections-For connection with R6T	Quantity	2				
	Remark	Minimum 0.75 mm²				
Wiring connections-For connection with A3P	Remark	Select diameter & type according to national & local regulations / Voltage: 230V / Max.current: 100mA / Min. 0.75mm²				
Wiring connections-For connection with M2S	Quantity	2				
	Remark	Select diameter & type according to national & local regulations / Voltage: 230V / Max.current: 100mA / Min. 0.75mm²				
Wiring connections-For connection with M3S	Quantity	3				
	Remark	Select diameter & type according to national & local regulations / Voltage: 230V / Max.current: 100mA / Min. 0.75mm²				
Wiring connections-For connection with bottom plate heater	Quantity	2				
	Remark	Select diameter and type according to national and local regulations				
Wiring connections-For connection with user interface	Quantity	2				
	Remark	0,75 mm² till 1,25 mm² (max length 500m)				
Wiring connections-For connection with optional FWXV* (demand input and output)	Quantity	4				
	Remark	100 mA, minimum 0.75 mm²				
Notes		DB/WB 7°C/6°C - LWC 35°C (DT=5°C)				

Notes

(1) With option kit *KHBDP installed: Height = XXX mm

(2) The sound pressure level is measured via a microphone at a 1m distance from the unit. It is a relative value, depending on the distance and acoustic environment.

(3) The sound pressure level mentioned is maximum possible value inside operation range of unit

(4) 15°C-25°C: BUH only, no heat pump operation = during commisioning

(5) Including piping + PHE + back-up heater; excluding expansion vessel

(6) Value mentioned is connection after ball valves, Connection at unit is G1-1/4 FEMALE

(7) See separate drawing for operation range

(8) \> 50°C BSH only, no heatpump operation

(9) BUH 3V/9W can only operate at flow \> 12/15 l/min

(10) Refer to operation range for detail for differences between *RHQ* and *RLQ* models

(11) PED unit category: excluded from scope of PED due to article 1, item 3.6 of 97/23/EC

(12) DB/WB 7°C/6°C - LWC 35°C (DT=5°C)

3 Electrical data

3 - 1 Electrical Data

EHB(H/X)-C

*Electrical meter specification

- Pulse meter type / voltage free contact for 5 VDC detection by PCB
- Possible number of pulse:
  - 0.1 pulse/kWh
  - 1 pulse/kWh
  - 10 pulse/kWh
  - 100 pulse/kWh
  - 1000 pulse/kWh
- Pulse duration:
  - Minimum ON time 40ms
  - Minimum OFF time 100ms
- Measurement type (depending on installation):
  - Single phase AC meter
  - Three phase AC meter (balanced loads)
  - Three phase AC meter (unbalanced loads)

*Electrical meter installation guideline

- General: it is the responsability of the installer to cover the complete power consumption with electrical meters.
- Required number of electrical meters:

Outdoor unit type		*RLQ(04/06/08)*			*R*Q(011/014/016)*V3			*R*Q(011/014/016)*W1		
Indoor unit type		*HB(H/X)(04/08)CA#			*HB(H/X)16CA#			*HB(H/X)16CA#		
Backup heater type (#)		3V/9W	9W	9W	3V/9W	9W	9W	3V/9W	9W	9W
Backup heater power supply		1~ 230V	3~ 400V	3~ 230V	1~ 230V	3~ 400V	3~ 230V	1~ 230V	3~ 400V	3~ 230V
Backup heater configuration		3/6 kW	6/9 kW	6 kW	3/6 kW	6/9 kW	6 kW	3/6 kW	6/9 kW	6 kW
		Regular kWh rate power supply								
Electrical meter type	1~	1	1	-	1	1	-	1	1	-
	3~balanced	-	1	-	-	1	-	1	1	-
	3~unbalanced	-	-	1	-	-	1	-	-	1
		Benefit kWh rate power supply								
Electrical meter type	1~	2	1	1	2	1	1	1	-	-
	3~balanced	-	-	-	-	-	-	1	1	1
	3~unbalanced	-	1	1	-	1	1	-	1	1

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EHB(H/X)-C

Electrical heater (Optional)	Type					3V	9W				
	Capacity setting				kW	3	6	3	6	6	9
	Capacity stages					1	2	1	2	2	2
	Capacity stage 1				kW	3	3	3	3	3	3
	Capacity stage 2				kW	-	6	6	6	6	9
	Minimum time delay between stages					Note (4)	Note (5)				
	Power supply (1)	Phase				1~	3~	1~	1~	3~	3~
		Frequency			Hz	50	50				
		Voltage			V	230	230	230	230	400	400
	Current	Running current (Backup heater)			A	13	15.1	13	26	8.7	13
		Zmax (Backup heater) - Note (2)			Ω	-	-	-	0.29	-	-
					complex	-	-	-	0.25 + j0.15	-	-
		Minimum Ssc value			kVA	-	-	-	Note (3)	-	-
Booster heater (Optional) (*KHW* models)	Capacity setting				kW	3	3	3	3	3	3
	Capacity stages					1	1	1	1	1	1
	Minimum time delay between stages					Note (6)					
	Current	Running current (Backup heater + Booster heater(*KHW* models))		+EK*V3	A	26 (13+13)	28.1 (15.1+13)	26(13+13)	39 (26+13)	21.7 (8.7+13)	26 (13+13)
				+EK*Z2	A	-	-	-	-	16.2 (8.7+7.5)	20.5 (13+7.5)
		Minimum Ssc value		+EK*V3	kVA	Note (3)	Note (3)	Note (3)	Note (3)	Note (3)	Note (3)
				+EK*Z2	kVA	-	-	-	-	Note (3)	Note (3)
		Zmax (Backup heater + Booster heater(*KHW models)) Note (2)			Ω	0.29	-	-	0.17	-	-
					complex	0.25 + j0.15	-	-	0.15 + j0.09	-	-
Voltage range	Minimum				V	207	207	207	207	360	360
	Maximum				V	253	253	253	253	440	440
Wiring connections	For power supply backup heater	Quantity of wires				3G	4G	3G	3G	4G	4G
		Type of wires				Select diameter and type according to national and local regulations.					

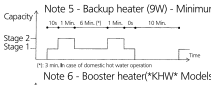
Notes:

1 Above mentioned power supply of the hydro box is for the backup heater only. The switch box and pump of the hydrobox are supplied via the outdoor unit. The optional domestic warm water tank has a seperate power supply.
2 In accordance with EN/IEC 61000-3-11(*), it may be necessary to consult the distribution network operator to ensure that the equipment is connected only to a supply with Zsys(***) <= Zmax
3 Equipment complying with EN/IEC 61000-3-12 (**)

(*) European/International Technical Standard setting the limits for voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated current <=75A.
(**) European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16A and <= 75A per phase.
(***) System impedance

Note 4 - Backup heater (3V) - Minimum time delay between stages

Note 5 - Backup heater (9W) - Minimum time delay between stages



Note 6 - Booster heater(*KHW* Models) - Minimum time delay between stages

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4 Combination table

4 - 1 Combination Table

EHB(H/X)-C

Factory mounted optional equipment for *HB(H/X)04/08/16CA#

	#					
Description	*HB(H/X)04CA		*HB(H/X)08/16CA			
Heating only model *HBH*	3V	-	3V	-	9W (9)	-
Reversible model *HBX*	-	3V	-	3V	-	9W (9)
Back up heater 3kW 1N~230V	○	○	○	○	○	○
Back up heater 6kW 1N~230V	-	-	-	-	○	○
Back up heater 6kW 3N~400V	-	-	-	-	○	○
Back up heater 6kW 3~230V	-	-	-	-	○	○
Back up heater 9kW 3N~400V	-	-	-	-	○	○

Outdoor combination table for *HB(H/X)04/08/16)CA# and *HB(H/X)165(18/26)CA*

		*RLQ 004CA*V3*	*RLQ 006CA*V3*	*RLQ 008CA*V3*	*RHQ 011B*(V3/W1)	*RHQ 014B*(V3/W1)	*RHQ 016B*(V3/W1)	*RLQ 011C*(V3/W1)	*RLQ 014C*(V3/W1)	*RLQ 016C*(V3/W1)
HBH04CA	Heating only	○	---	---	---	---	---	---	---	---
HBX04CA	Reversible	○	---	---	---	---	---	---	---	---
HBH08CA	Heating only	---	○	○	---	---	---	---	---	---
HBX08CA	Reversible	---	○	○	---	---	---	---	---	---
HBH16CA	Heating only	---	---	---	○	○	○	○	○	○
HBX16CA	Reversible	---	---	---	○	○	○	○	○	○

Kit availability for outdoor units

		*RLQ 004CA*V3*	*RLQ 006CA*V3*	*RLQ 008CA*V3*	*RHQ 011B*(V3/W1)	*RHQ 014B*(V3/W1)	*RHQ 016B*(V3/W1)	*RLQ 011C*(V3/W1)	*RLQ 014C*(V3/W1)	*RLQ 016C*(V3/W1)
EKDP008CA	Drain pan kit	○	○	○	---	---	---	---	---	---
*KDK04	drain plug kit (3)	---	---	---	○	○	○	---	---	---
*KBPHTH16A	Bottom plate heater (1) (3) (14)	---	---	---	○	○	○	--- (8)	--- (8)	--- (8)
*K0165NC	Snow cover	---	---	---	---	---	---	○	○	○

Kit availability

Reference	Description	#			
	Heating only model *HBH*	3V3		9WN	
	Reversible model *HBX*	3V3		9WN	
*KRSCA1	Remote sensor for outdoor (15)	Availability TBC			
KRCS01-1	Remote sensor for indoor (15)	○	○	○	○
*KRUCAL1	User interface language group 1	○	○	○	○
*KRUCAL2	User interface language group 2	○	○	○	○
*KHWS150*3V3	Domestic hot water tank 150L 1~230V	○	○	○ (*)	○ (*)
*KHWS200*3V3	Domestic hot water tank 200L 1~230V	○	○	○ (*)	○ (*)
*KHWS300*3V3	Domestic hot water tank 300L 1~230V	○	○	○ (*)	○ (*)
*KHWS200*3Z2	Domestic hot water tank 200L 2~400V (7)	○	○	○	○
*KHWS300*3Z2	Domestic hot water tank 300L 2~400V (7)	○	○	○	○
*KHWSU150*3V3	Domestic hot water tank 150L 1~230V (Only for UK)	○	○	○ (*)	○ (*)
*KHWSU200*3V3	Domestic hot water tank 200L 1~230V (Only for UK)	○	○	○ (*)	○ (*)
*KHWSU300*3V3	Domestic hot water tank 300L 1~230V (Only for UK)	○	○	○ (*)	○ (*)
*KHWE150*3V3	Enamel domestic hot water tank 150L 1~230V	○	○	○ (*)	○ (*)
*KHWET150*3V3	Wallmounted enamel domestic hot water tank 150L	○	○	○ (*)	○ (*)
*KHWE200*3V3	Enamel domestic hot water tank 200L 1~230V	○	○	○ (*)	○ (*)
*KHWE300*3V3	Enamel domestic hot water tank 300L 1~230V	○	○	○ (*)	○ (*)
*KHWE200*3Z2	Enamel domestic hot water tank 200L 2~400V (7)	○	○	○	○
*KHWE300*3Z2	Enamel domestic hot water tank 300L 2~400V (7)	○	○	○	○
*KHBDPCA2	Option kit for condensate free cooling operation	Availability TBC			
*KRP1HBAA	Digital I/O PCB (2)	○	○	○	○
*KRP1AHTA	Demand PCB (6)	○	○	○	○
*KRTWA	Wired room thermostat option kit	○	○	○	○
*KRTR1	Wireless room thermostat option kit (incl. receiver)	○	○	○	○
*KRTETS	External temperature sensor option kit (4)	○	○	○	○
FWXV15AVEB	Heat pump convector	○	○ (5)	○	○ (5)
FWXV20AVEB	Heat pump convector	○	○ (5)	○	○ (5)
*KVKHPC	Valve kit heat pump convector (5)	○	○ (5)	○	○ (5)
*KPCCAB1	PC cable kit (16)	Availability TBC			

Kit availability for *KHW*

Reference	Description	#							
	*KHWE(T)#3(V3/Z2)	150A 200/300A							
	*KHWS#3(V3/Z2)			150(A/B) 200/300(A/B)					
	*KHWSU#3V3					150A	200/300A	150B	200/300B
*KUHWA	Option kit for UK *KHWSU150~300*3V3	-	-	-	-	○	○	○	○
*KUHWB	Option kit 1 for UK *KHWSU150~300*3V3 (13)	-	-	-	-	○ (11)	○ (11)	○	○
*KUHW2WB	Option kit 2 for UK *KHWSU150~300*3V3 (13)	-	-	-	-	○ (11)	○ (11)	○ (12)	○ (12)
*KSOLHWAV1	Solarkit (10)	○	○	○	○	○	○	○	○
*KWBSWW150	Wall bracket for *KHWS(U)150*3V3 or *KSWW150V3*	-	-	○	-	○	-	○	-

Kit availability for *KSOLHWAV1

EKSR3PA	Solar station controller
EKSRDS1A	Solar pump station

Remark: Other combinations than mentioned in this combination table are prohibited

(*) If neutral line is available.
(1) Heater tape that can be fixed on the bottom plate to prevent excessive ice formation.
(2) PCB that provides additional output connections:
  (a) Control external heat source (bivalent operation)
  (b) Output remote ON/OFF signal space heating/cooling OR bottom plate heater *KBPHTH16* control
  (c) Remote alarm output
  (d) Solar pump connection. In *KSOLHWAV1, option kit *KRP1HB is already included.
(3) It is not allowed to combine bottom plate heater and drain plug/stop kit
(4) *KRTETS can only be used in combination with *KRTR1.
(5) Valve kit mandatory if heat pump convector is installed on reversible model (not mandatory for heating only model).
(6) PCB to receive up to 4 digital inputs for power limitation, only for *HB(H/X)04/08CA
(7) Combination possibility depends on available power supply type.
(8) Bottom plate heater is factory mounted and controlled by outdoor unit.
(9) Unified model, the actual BUH capacity depends on the actual internal upwiring.
(10) Kit to be mounted on domestic hot water tank that provides connection to solar panels for additional water heating.
(11) If installation on tank A version both kits are required.
(12) Kit is only necessary when installing *KSOLHWAV1 on a UK tank B-series (*KHWSU(150/200/300)B3V3)
(13) *KUHWB=*KUHWA - (2 way valve and 2 way valve accessories)
  *KUHW2WB=2 way valve and 2 way valve accessories
(14) Requires digital I/O PCB *KRP1HBAA
(15) Only 1 sensor can be connected: indoor OR outdoor sensor
(16) Data cable for connection with PC

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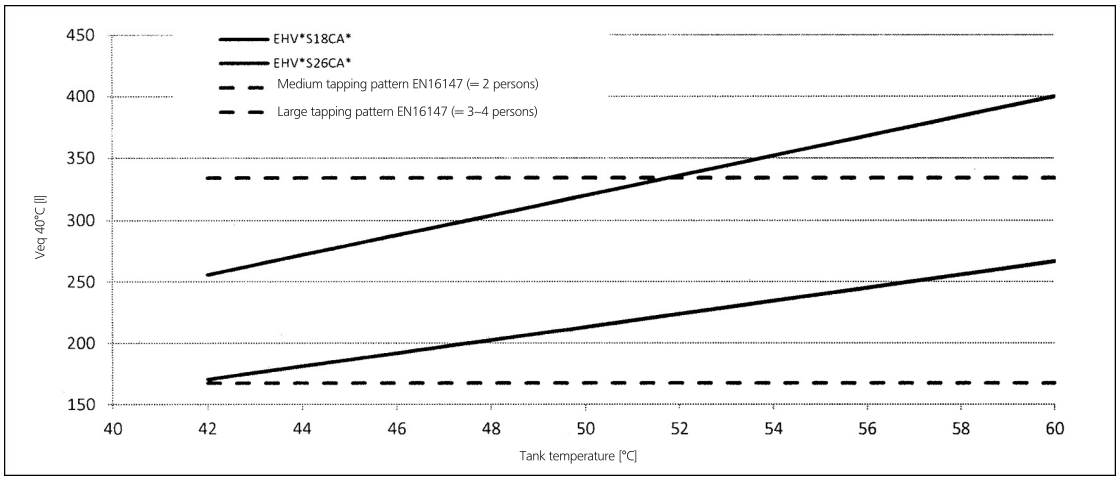
5 Capacity tables

5 - 1 Domestic Hot Water performance

EHB(H/X)-C

Selection guidance of domestic hot water tank volume (2):

Veq = amount of water that can be tapped with a temperature with a temperature of 40°C when the hot water tank is heated till a certain temperature with a colder water inlet temperature of 10°C.
The 40°C is considered as a comfortable domestic hot water temperature.



If a higher daily Veq 40°C is required then additional heat up cycles are required within 24 hours. Refer to the operation manual for more information. (°C)

Heat losses of domestic hot water tank (3)

Tank	Heat losses [kWh/24h]	
EKHWS*	150l	1.55
	200l	1.77
	300l	2.19

Notes:
(1) Time required to heat up the tank starting from a temp of 10°C up to the indicated temp with the heatpump only.
(2) According to EN16147
(3) According to EN12897

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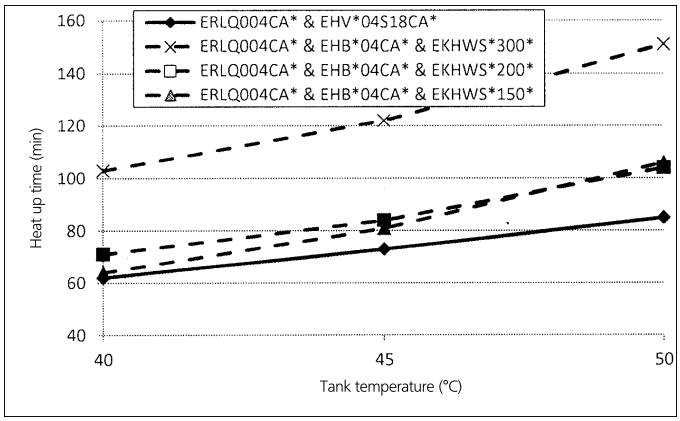
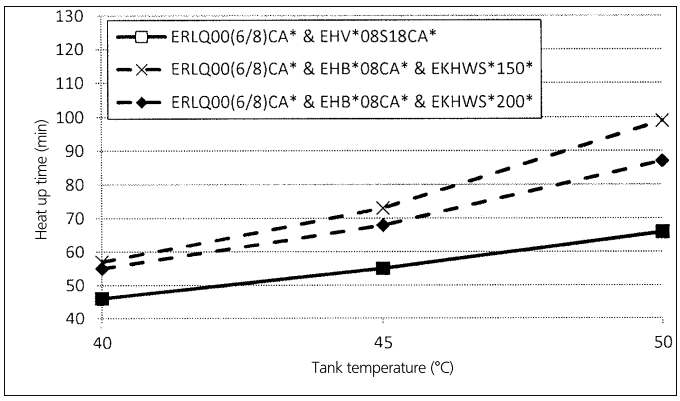
5 Capacity tables

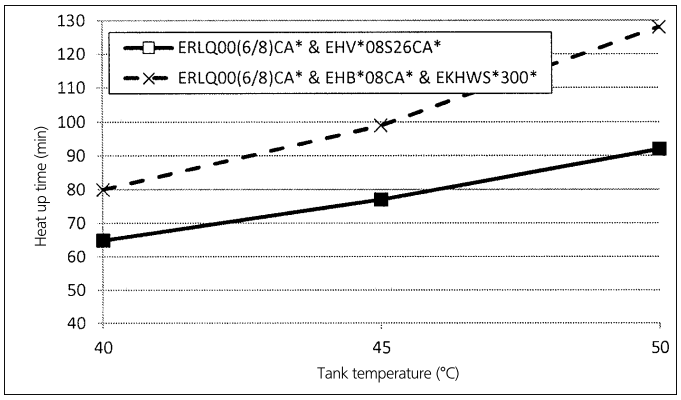
5 - 1 Domestic Hot Water performance

EHB(H/X)04-08C

Heat up times GBS (1):







Notes:
(1) Time required to heat up the tank starting from a temp of 10°C up to the indicated temp with the heatpump only. Refer to operation range for maximum tank temperature with heatpump only.

Heat-up time tank untill 45°C

	ERLQ004CA* & EHB*04CA*	ERLQ00(6/8)CA* & EHB*08CA*
EKHWS*150*	81	73
EKHWS*200*	84	68
EKHWS*300*	122	99

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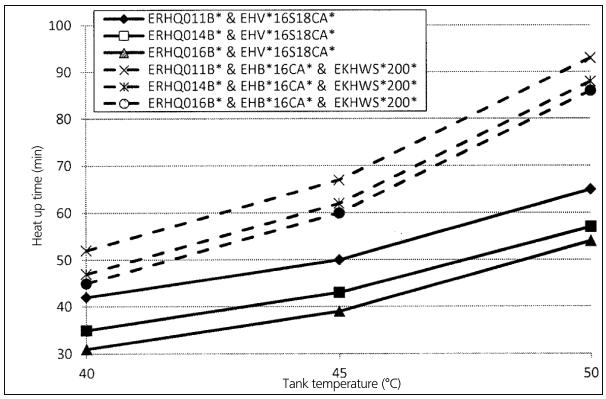
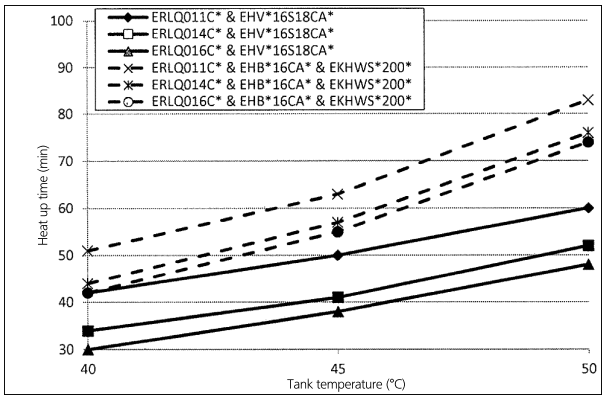
5 Capacity tables

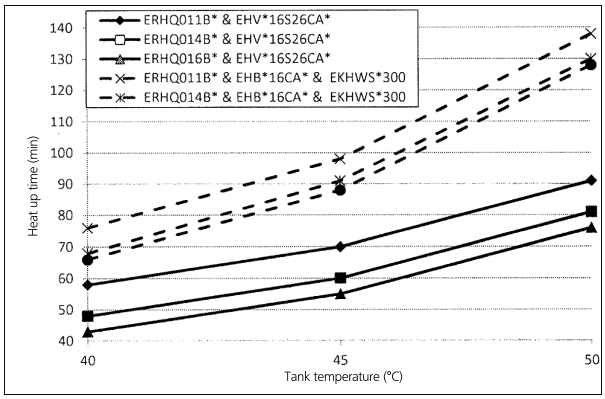
5 - 1 Domestic Hot Water performance

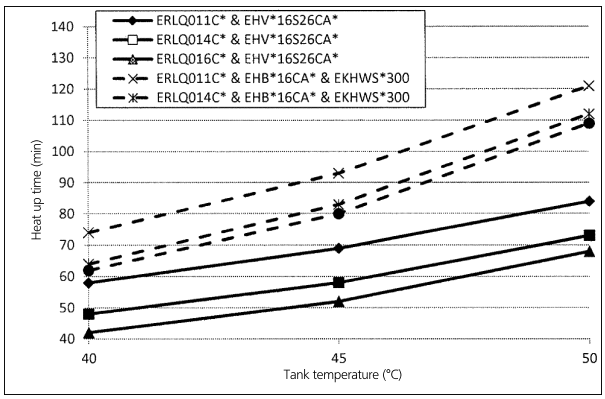
EHB(H/X)16C

Heat up times GQI (1):









Notes:
(1) Time required to heat up the tank starting from a temp of 10°C up to the indicated temp with the heatpump only.
Refer to operation range for maximum tank temperature with heatpump only.

Heat-up time tank untill 45°C

	ERLQ016C* & EHB*16CA*
EKHWS*150*	69
EKHWS*200*	55
EKHWS*300*	80

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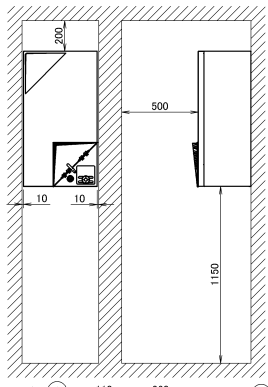
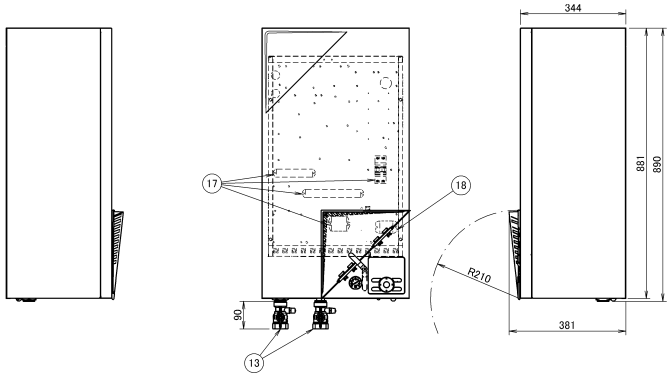
6 Dimensional drawings

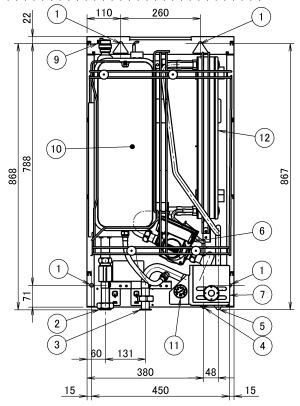
6 - 1 Dimensional Drawings

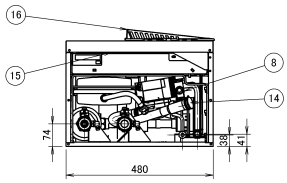
EHB(H/X)04-08C

Required space for service and ventilation









① Holes (ϕ 12) for fixation to the wall
② Water out connection (1-1/4″ F BSP)
③ Water in connection (1-1/4″ F BSP)
④ Refrigerant liquid connection ϕ6.35 (flare)
⑤ Refrigerant suction connection ϕ15.9 (flare)
⑥ Pump
⑦ User interface
⑧ Safety valve (pressure)
⑨ Air purge
⑩ Expansion vessel
⑪ Pressure gauge
⑫ Heat exchanger (Refrigerant / Water)
⑬ Shut off valve with drain / fill valve (1-1/4″ F BSP) (Included accessory)
⑭ Water filter
⑮ Power supply / Communication wire entrance
⑯ Service door
⑰ Switchbox terminals
⑱ Switchbox terminals for domestic hot water tank (Option)

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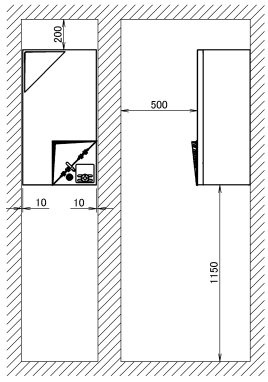
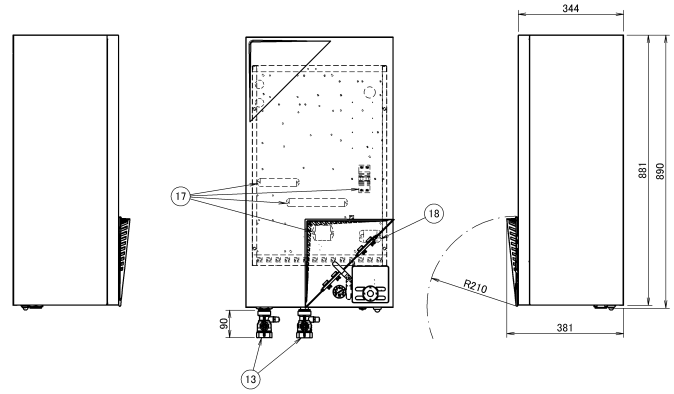
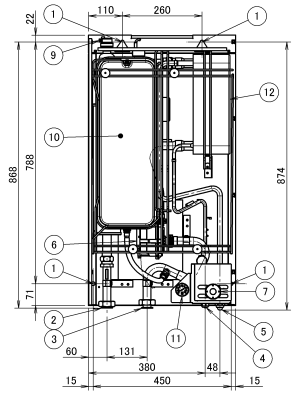
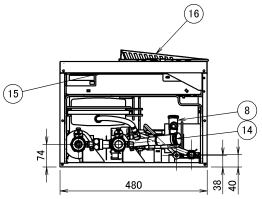
EHB(H/X)16C

Required space for service and ventilation









① Holes (ϕ 12) for fixation to the wall
② Water out connection (1-1/4″ F BSP)
③ Water in connection (1-1/4″ F BSP)
④ Refrigerant liquid connection ϕ9.52 (flare)
⑤ Refrigerant suction connection ϕ15.9 (flare)
⑥ Pump
⑦ User interface
⑧ Safety valve (pressure)
⑨ Air purge
⑩ Expansion vessel
⑪ Pressure gauge
⑫ Heat exchanger (Refrigerant / Water)
⑬ Shut off valve with drain / fill valve (1-1/4″ F BSP) (Included accessory)
⑭ Water filter
⑮ Power supply / Communication wire entrance
⑯ Service door
⑰ Switchbox terminals
⑱ Switchbox terminals for domestic hot water tank (Option)

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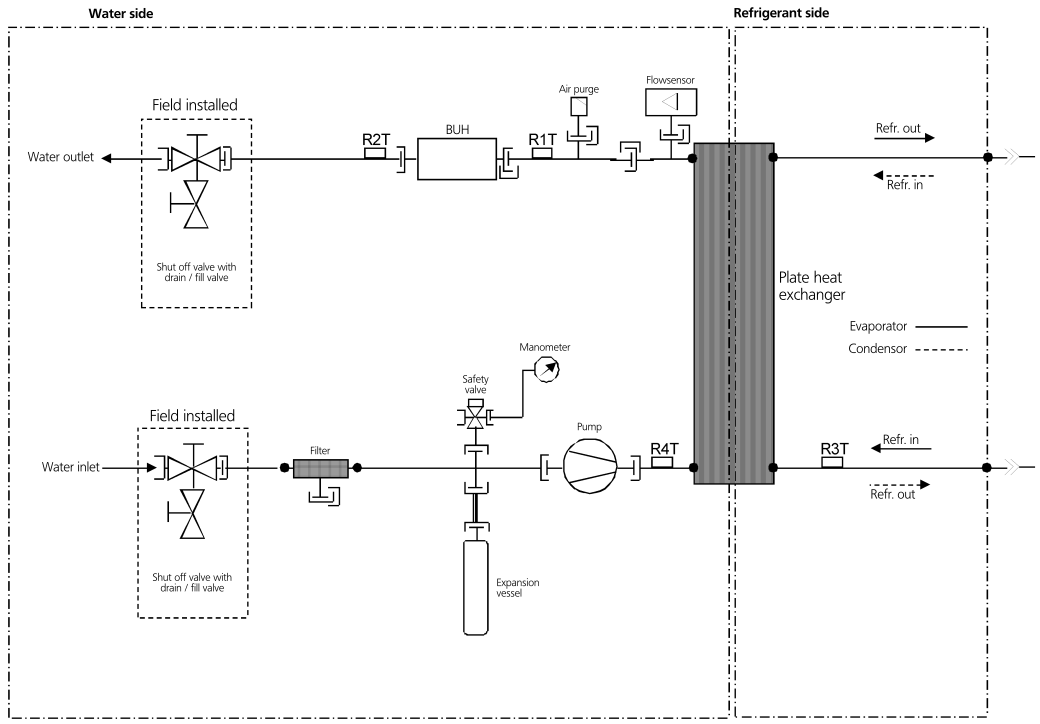
7 Piping diagrams

7 - 1 Piping Diagrams

EHB(H/X)-C



Legend

	Flare connection		Check valve		Brazed connection		Quick coupling
	Screw connection		Flange connection		Pinched pipe		Spinned pipe

Thermistor	Description
R1T	Outlet water heat exchanger thermistor
R2T	Outlet water backup heater thermistor
R3T	Refrigerant liquid side thermistor
R4T	Inlet water thermistor

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8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

EHB(H/X)-C

NOTES TO GO THROUGH BEFORE STARTING THE UNIT

X1M : Main terminal
X2M : Field wiring terminal for AC
X5M : Field wiring terminal for DC
X6M, X7M : Backup heater terminal
X4M : Booster heater terminal

— - — - : Earth wiring
15 : Wire number 15
- - - - - - - - - - : Field supply
→ **/12.2 : Connection ** continues on page 12 column 2
① : Several wiring possibilities

: Option

: Wiring depending on model

: Not mounted in switchbox

: PCB

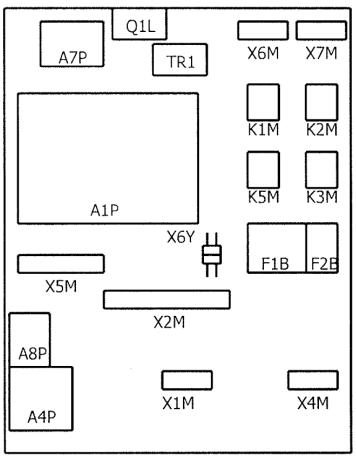
Backup heater configuration (Only for *9W):
- □ 3V3 (1N~, 230 V, 3 kW)
- □ 6V3 (1N~, 230 V, 6 kW)
- □ 6WN (3N~, 400 V, 6 kW)
- □ 9WN (3N~, 400 V, 9 kW)
- □ 6T1 (3~, 230 V, 6 kW)

User installed options:
- □ Bottom plate heater
- □ Domestic hot water tank
- □ Domestic hot water tank with solar connection
- □ Remote user interface
- □ Ext. indoor thermistor
- □ Ext. outdoor thermistor
- □ Digital I/O PCB
- □ Demand PCB
- □ Solar pump and control station

Main LWT:
- □ ON/OFF thermostat (Wired)
- □ ON/OFF thermostat (Wireless)
  - □ Ext. Thermistor
- □ Heat pump convector

Add LWT:
- □ ON/OFF thermostat (Wired)
- □ ON/OFF thermostat (Wireless)
  - □ Ext. Thermistor
- □ Heat pump convector

POSITION IN SWITCHBOX



LEGEND

* : Optional
(*) : Standard for *HV*, Optional for *HB*
: Field supply

A1P		: Main PCB
A2P		: User interface PCB
A3P	*	: Solar pumpstation PCB
A3P	*	: ON/OFF thermostat (PC=Power circuit)
A3P	*	: Heat pump convector
A4P	*	: Digital I/O PCB
A4P	*	: Receiver PCB (wireless ON/OFF thermostat)
A7P		: Pump driver PCB (Only for *16*)
A8P	*	: Demand PCB
B1L		: Flow sensor
BSK	*	: Solar pump station relay
DS1 (A8P)	*	: Dipswitch
E1H		: Backup heater element (1 kW)
E2H		: Backup heater element (2 kW)
E3H		: Backup heater element (3 kW)
E4H	*	: Booster heater (3 kW)
F1B		: Overcurrent fuse backup heater
F2B	*	: Overcurrent fuse booster heater
F1T		: Thermal fuse backup heater
F1U,F2U	*	: Fuse 5A 250V for digital I/O PCB
FU1		: Fuse T 6.3A 250 V for PCB
PHC1	*	: Optocoupler input circuit
K1M,K2M		: Contactor backup heater
K3M	*	: Contactor booster heater
K5M		: Safety contactor BUH (only *9W)
K*R		: Relay on PCB
M1P		: Main supply pump
M2P	#	: Domestic hot water pump
M2S	#	: 2 way valve for cooling mode
M3S	(*)	: 3 way valve for floorheating/domestic hot water
Q1DI, Q2DI	#	: Earth leakage circuit breaker
Q1L		: Thermal protector backup heater
Q2L	*	: Thermal protector booster heater
R1T		: Outlet water heat exchanger thermistor
R1T (A2P)		: Ambient sensor user interface
R1T (A3P)	*	: Ambient sensor ON/OFF thermostat
R2T		: Outlet backup heater thermistor
R2T	*	: External sensor (floor or ambient)
R3T		: Refrigerant liquid side thermistor
R4T		: Inlet water thermistor
R5T	(*)	: Domestic hot water thermistor
R6T	*	: External indoor or outdoor ambient thermistor
R1H (A3P)	*	: Humidity sensor
S1S	#	: Preferential kWh rate power supply contact
S2S	#	: Electrical meter pulse input 1
S3S	#	: Electrical meter pulse input 2
S6S-S9S	#	: Digital power limitation inputs
SS1 (A4P)	*	: Selector switch
T1R (A7P)		: Rectifier bridge (Only for *16*)
TR1		: Power supply transformer
X*M		: Terminal strip
X*Y		: Connector

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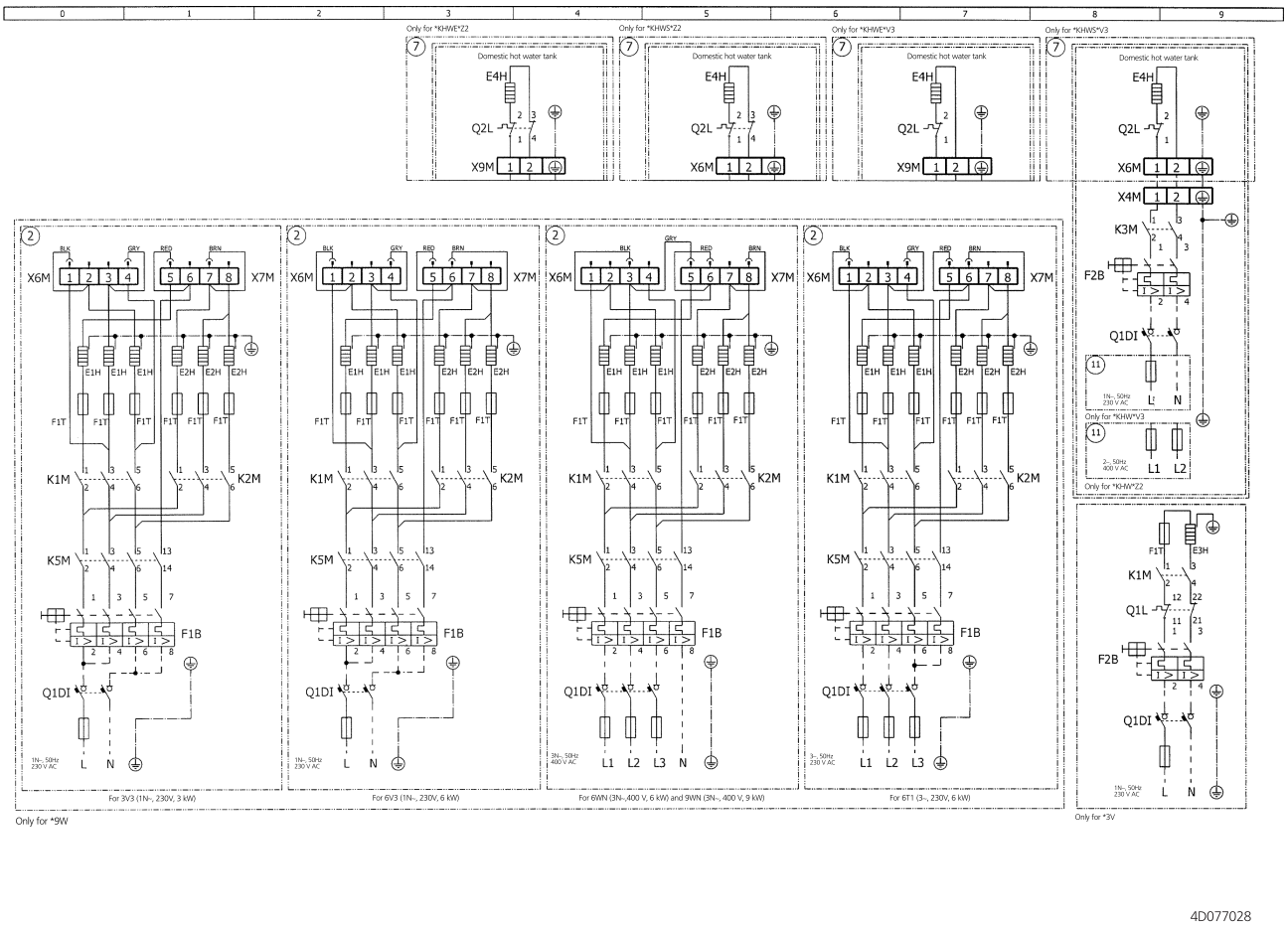
8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

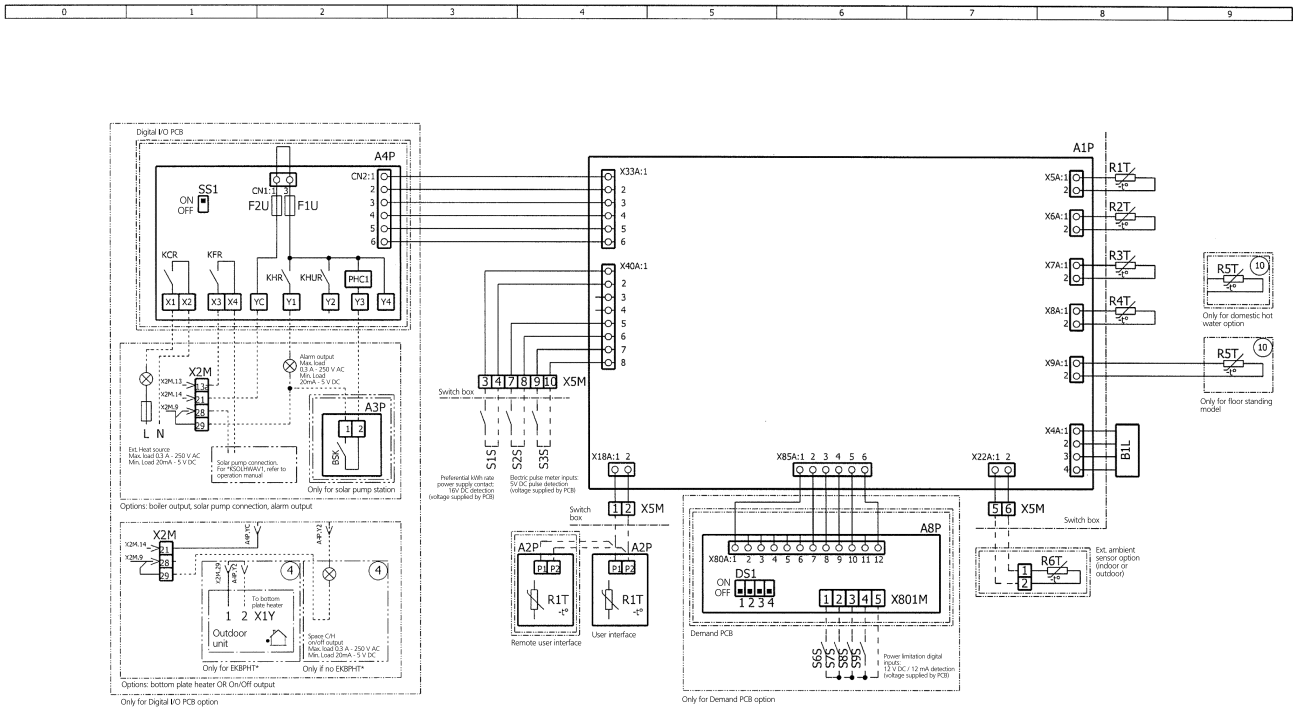
EHB(H/X)-C



8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

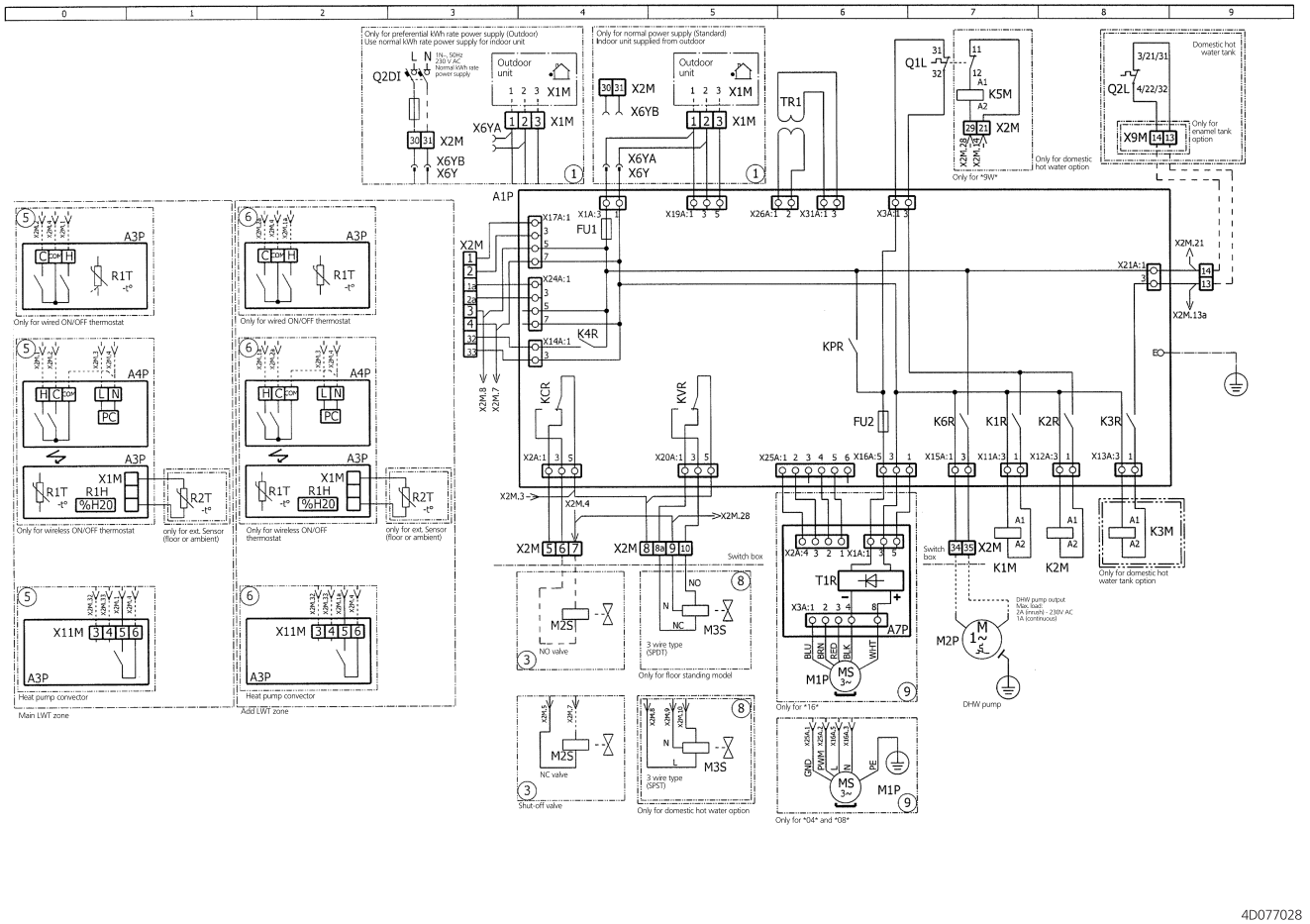
EHB(H/X)-C



8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

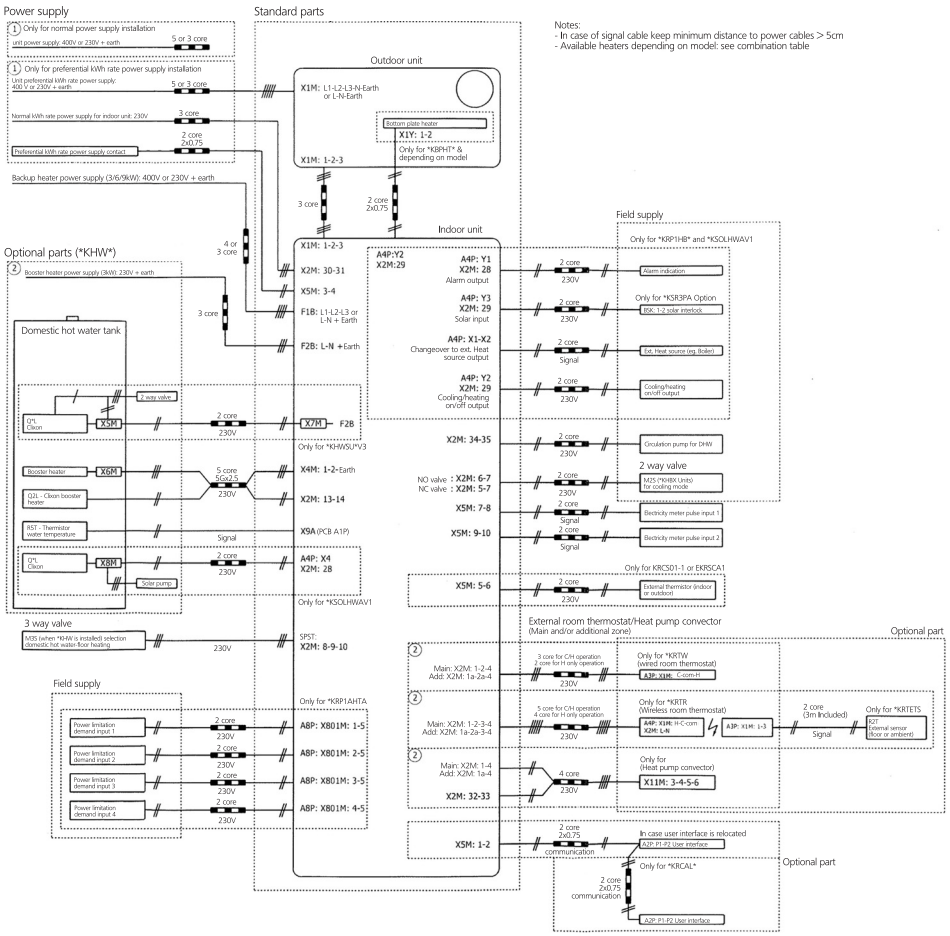
EHB(H/X)-C



9 External connection diagrams

9 - 1 External Connection Diagrams

EHB(H/X)-C

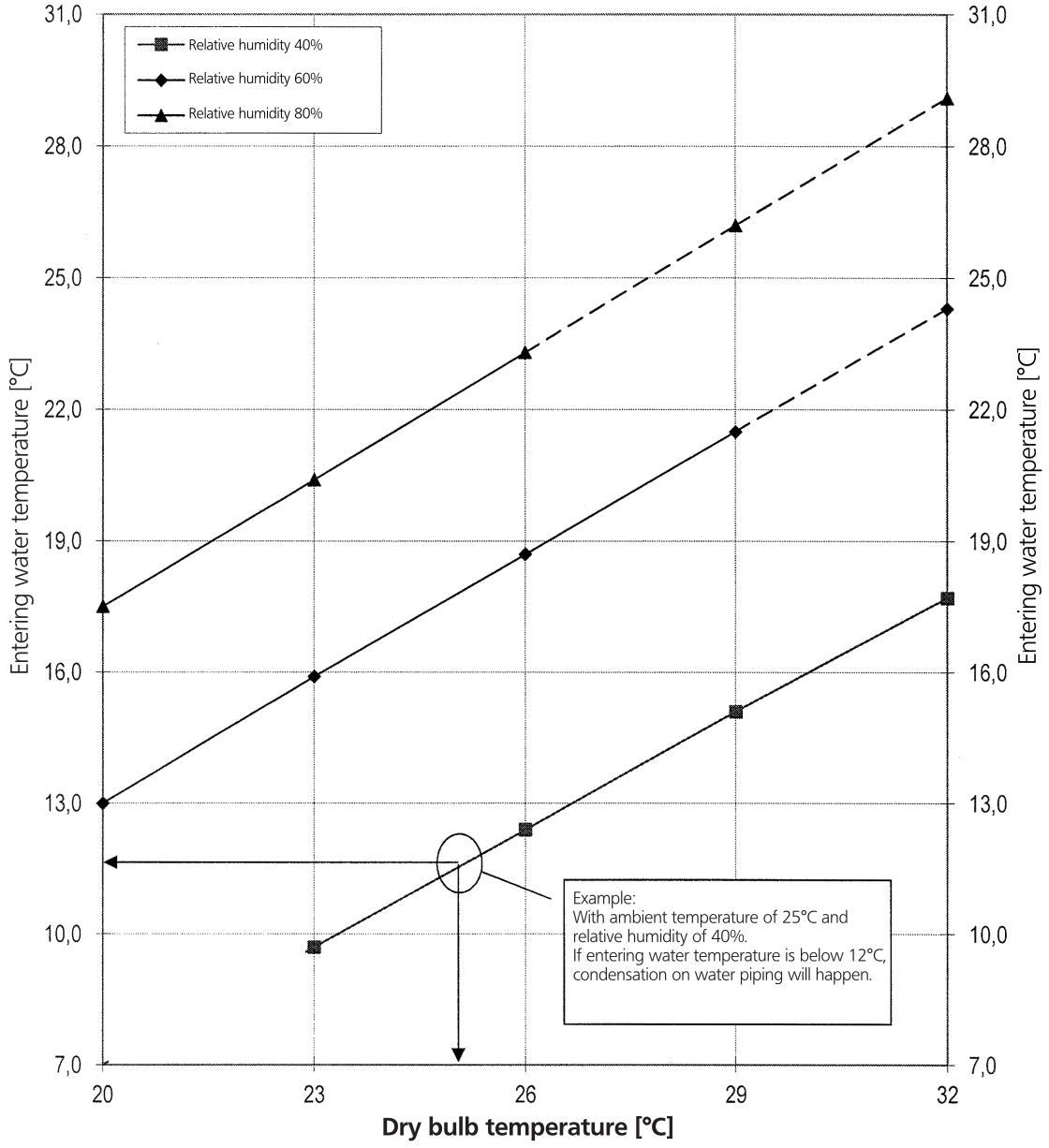


10 Hydraulic performance

10 - 1 Static Pressure Drop Unit

EHB(H/X)-C

Entering water temperature limit to prevent condensation



1. Refer to psychometric chart for more information.
2. If condensation is expected, installation of EKHBDPCA2 - drainpan kit must be considered.

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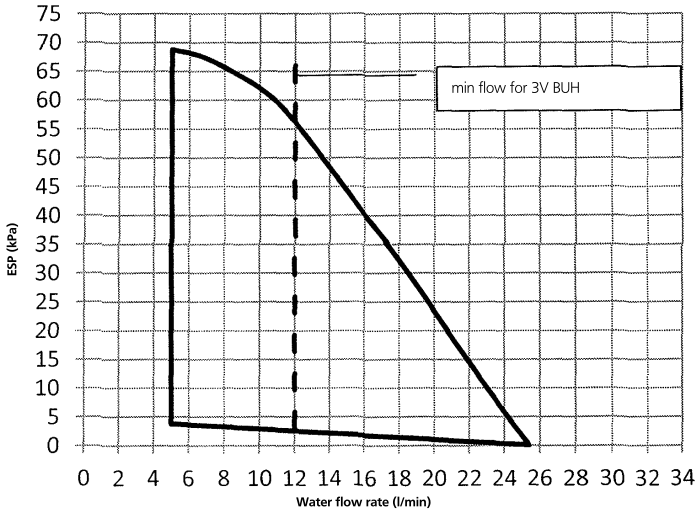
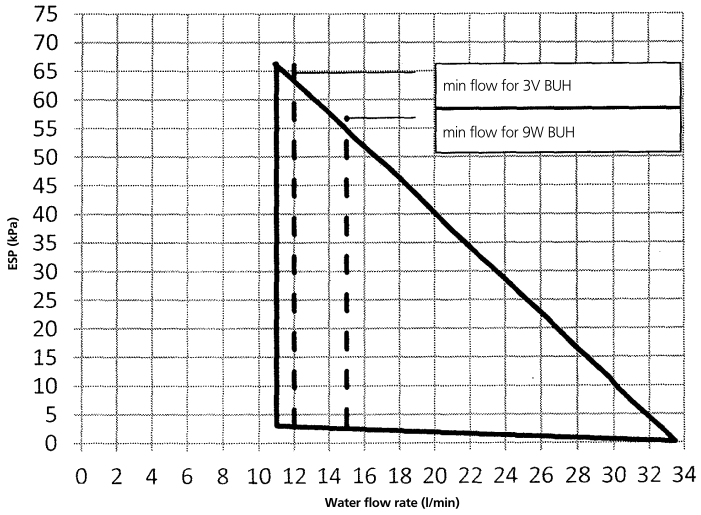
10 Hydraulic performance

10 - 1 Static Pressure Drop Unit

EHB(H/X)04-08C



EHB(H/X)04CA3V



EHB(H/X)08CAV3
EHB(H/X)08CA9W

ESP: External static pressure
Flow: waterflow through the unit

Notes:
1) Selecting a flow outside the area of operation can cause damage or malfunctioning of the unit.
See also minimum and maximum allowed waterflow range in the technical specifications.
2) Water quality must be according to EN directive EC 98/83 EC.

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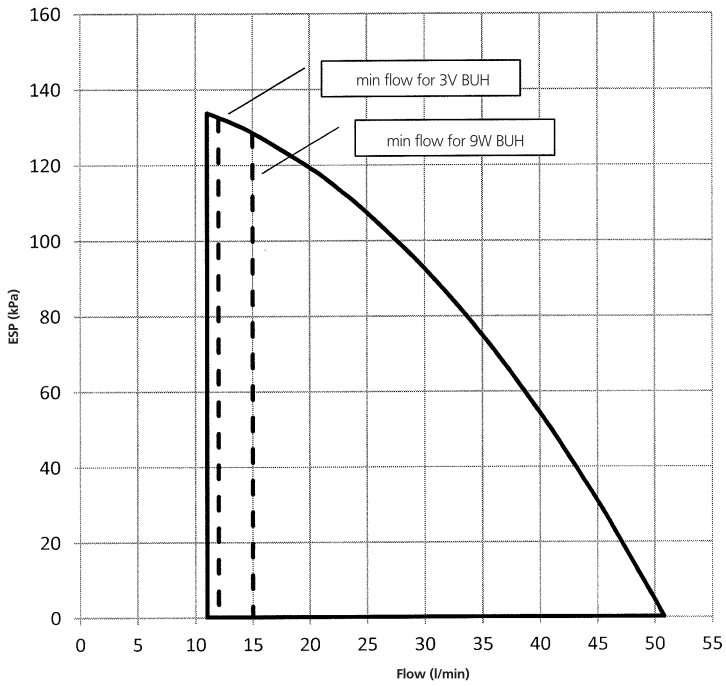
10 Hydraulic performance

10 - 1 Static Pressure Drop Unit

EHB(H/X)16C



ESP: External static pressure
Flow: waterflow through the unit

Notes:
1) Selecting a flow outside the area of operation can cause damage or malfunctioning of the unit.
See also minimum and maximum allowed waterflow range in the technical specifications.
2) Water quality must be according to EN directive EC 98/83 EC.

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